


REMARKS

The Supplemental Amendment submitted herewith is in order to correct a typographical error in the substitute specification submitted on March 19, 2003. No new matter has been added.

A copy of the amended portion of the substitute specification is enclosed and entitled "Version with Markings to Show Changes Made".

Respectfully submitted,

Hideki KISHI et al.

By: 

Michael S. Huppert
Registration No. 40,268
Attorney for Applicants

MSH/kjf
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
March 21, 2003

capacity of the battery 1. The keeping degradation capacity per unit time with the keeping temperature and the residual capacity of the battery 1 as the parameters is stored in a memory of the shelf degradation cycle degradation judgment portion 9.

[0028]

Fig. 2 shows a table stored in the memory. The table of this drawing specifies the keeping degradation capacity per unit time as a coefficient with the keeping temperature and the residual ratio (%) of the battery 1 as parameters. In other words, the coefficient for calculation of the keeping degradation capacity is specified from the keeping temperature and the residual ratio. In the table of this drawing, as the residual capacity, the residual ratio (%) is made the parameter, however, the residual quantity (Ah or Wh) can also be made the parameter. The shelf degradation cycle degradation judgment portion 9 specifies the keeping degradation capacity per unit time from the keeping temperature and the residual capacity of the battery 1 and from the coefficient of the keeping degradation capacity table, adds the specified coefficient as a time passes, and corrects the learning capacity in the keeping state.

[0029]

Fig. 2 shows the coefficient for calculation of the keeping degradation capacity of the battery 1 for one minute in the keeping state. This coefficient is made such a numerical value that when an added count value becomes 10^6 , the learning capacity is decreased by 1 %. In this drawing, A to E are determined to

be the following coefficients. However, A to E can also be determined to be within the range shown in the bracket according to the battery.

A 2.5 . . . 2.5 (0 to 5)

B . . . 8 (6 to 10)

C . . . 15 (11 to 20)

D . . . 35 (21 to 50)

E . . . 75 (51 to 100)

[0030]

The shelf degradation cycle degradation judgment portion 9 adds the coefficient of the table specified from the keeping temperature and the residual capacity every minute, and when the added count value reaches 10^6 , it decreases the learning capacity by 1 %. This shelf degradation cycle degradation judgment portion 9 adds, with one minute as a unit, the coefficient for calculation of the keeping degradation capacity from the keeping temperature and the residual capacity, so that the learning capacity can be very accurately corrected in the state where the temperature at which the battery 1 is left as it is and the residual capacity are changed. However, the unit time when the shelf degradation cycle degradation judgment portion 9 adds the coefficient from the keeping temperature and the residual capacity can also be made, for example, 30 seconds to 60 minutes, preferably one minute to 30 minutes. Since the table of Fig. 2 shows the coefficient for correction of the learning capacity with one minute as a unit, the